RISK OF FALLING IN HOSPITALIZED PATIENTS: RISK FACTORS AND NURSING INTERVENTIONS

Risco de queda de pacientes hospitalizados: fatores de risco e atuações de enfermagem

Riesgo de caída en pacientes ingresados: factores de riesgo e intervenciones de Enfermería

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ABSTRACT

Objective: To identify risk factors for falls in hospitalized patients and propose nursing actions. **Methods**: This is an evaluative, descriptive and quantitative study, developed from June to September 2017, carried out in a philanthropic entity located in Sobral, Ceará, Brazil. The collection included 155 participants, being carried out using a structured instrument containing risk factors for falls, according to the taxonomy of the North American Nursing Diagnosis Association (NANDA-I). Descriptive analysis with absolute and relative frequencies was used. **Results**: The sample of 155 participants showed that 74.83% (n = 116) were men, 54.83% (n = 85) active workers, 62.58% (n = 97) were married, 84.45% (n = 134) Catholics and 68.38% (n = 106) had completed elementary school. The main risk factors identified were: difficulty in walking (56.77%; n= 88), impaired physical mobility (50.96%;n=79), and impaired balance (47.74%;n= 74). There was also a history of falls and the use of auxiliary devices, both with a frequency of 27.74% (n=43). As for the environment, the main risk factor was insufficient non-slip material in the bathroom, with 26.67% (n = 46). Based on these results, actions were proposed covering the cognitive and environmental dimensions, balance, transfer, the use of health devices, health education, and hospital structures. **Conclusion**: Difficulty in walking, impaired physical mobility, impaired balance, and use of auxiliary devices are the main risk factors mapped. The identification of the risk of fallings and the prescription of appropriate nursing actions can favor the prevention of the occurrence of this adverse event in the evaluated hospital.

Descriptors: Accidental Falls; Nursing Diagnosis; Nursing Process; Classification; Nursing Care.

RESUMO

Objetivo: *Identificar fatores de risco de queda em pacientes hospitalizados e propor atuações de Enfermagem.* ***Métodos:*** *Estudo avaliativo, descritivo e quantitativo, desenvolvido de junho a setembro de 2017, realizado em entidade filantrópica localizada em Sobral, Ceará, Brasil. A coleta incluiu 155 participantes, sendo realizada a partir de instrumento estruturado contendo fatores de risco de queda, conforme taxonomia da North American Nursing Diagnosis Association (NANDA-I). Utilizou-se a análise descritiva com frequências absoluta e relativa.* ***Resultados:*** *A amostra de 155 participantes evidenciou que 74,83% (n=116) eram homens, 54,83% (n=85) trabalhadores ativos, 62,58% (n=97) eram casados, 84,45% (n=134) católicos e 68,38% (n=106) tinham ensino fundamental completo. Os principais fatores de risco identificados foram: dificuldade na marcha (56,77%;n=88),*

*mobilidade física prejudicada (50,96%;n=79), equilíbrio prejudicado (47,74%;n=74). Também esteve presente o histórico de quedas e o uso de dispositivos auxiliares, ambos com frequência de 27,74% (n=43). Quanto ao ambiente, o principal fator de risco foi material antiderrapante insuficiente no banheiro, com 26,67% (n=46). Com base nesses resultados, propuseram-se ações contemplando as dimensões cognitivas e ambientais, o equilíbrio, a transferência, o uso de dispositivos de saúde, a educação em saúde e as estruturas hospitalares. **Conclusão:** Dificuldade na marcha, mobilidade física prejudicada, equilíbrio prejudicado e uso de dispositivos auxiliares são os principais fatores de risco mapeados. A identificação do risco de quedas e a prescrição de atuações de Enfermagem adequadas podem favorecer a prevenção da ocorrência desse evento adverso no hospital avaliado.*

Descritores: Acidentes por Quedas; Diagnóstico de Enfermagem; Processo de Enfermagem; Classificação; Cuidados de Enfermagem.

RESUMEN

*Objetivo: Identificar los factores de riesgo de caídas en pacientes ingresados y proponer actuaciones de Enfermería. **Métodos:** Estudio evaluativo, descriptivo y cuantitativo desarrollado entre junio y septiembre de 2017 realizado en una entidad filantrópica de Sobral, Ceará, Brasil. La recogida de datos incluyó 155 participantes y ha sido realizada a partir de un instrumento estructurado con los factores de riesgo de caídas según la taxonomía de la North American Nursing Diagnosis Association (NANDA-I). Se utilizó el análisis descriptivo con frecuencias absoluta y relativa. **Resultados:** La muestra de 155 participantes ha evidenciado que el 74,83% (n=116) eran hombres, el 54,83% (n=85) eran trabajadores activos, el 62,58% (n=97) eran casados, el 84,45% (n=134) eran católicos y el 68,38% (n=106) tenían la educación primaria completa. Los principales factores de riesgo identificados fueron: la dificultad de la marcha (56,77%;n=88), la movilidad física perjudicada (50,96%;n=79) y el equilibrio perjudicado (47,74%;n=74). Se ha identificado también el histórico de caídas y el uso de dispositivos auxiliares ambos con una frecuencia del 27,74% (n=43). Sobre el ambiente, el principal factor de riesgo ha sido el material antideslizante insuficiente en el baño en el 26,67% (n=46) de los casos. Con base en eses resultados, se han propuesto acciones que incluyen las dimensiones cognitivas y ambientales, el equilibrio, la transferencia, el uso de dispositivos de salud, la educación en salud y las estructuras hospitalarias. **Conclusión:** La dificultad de la marcha, la movilidad física perjudicada, el equilibrio perjudicado y el uso de dispositivos auxiliares son los principales factores de riesgo presentados en el estudio. La identificación del riesgo de caídas y la prescripción de actuaciones de Enfermería adecuadas pueden favorecer la prevención de ese evento adverso en el hospital evaluado.*

Descriptores: Accidentes por Caídas; Diagnóstico de Enfermería; Proceso de Enfermería; Clasificación; Atención de Enfermería.

INTRODUCTION

Fall, an event that causes an individual to inadvertently rest on the ground, on the floor or at another lower level, represents the second leading cause of accidental or unintended deaths worldwide. According to the World Health Organization (WHO), it is estimated that 37.3 million serious falls occur each year and that approximately 646,000 people die each year in the world due to falls[1].

In the hospital environment, falls are associated not only with an increase in mortality rates, but also with time and costs of hospitalization, in addition to contributing to a decrease in quality of life[2]. A study carried out in Japan with 49,059 patients hospitalized over a period of one year, showed that, in that time interval, adverse events occurred in 12% of the analyzed cases and 1.7% of these were related to falls[3]. Another study, carried out in Australia, found that patients with fall-related injury had, on average, an increase of 4 days in hospital stay and $ 4,727 in hospital costs[4].

In this context, the identification of the risk of falling is crucial for the implementation of preventive interventions[5] and Nursing can contribute to the planning of actions in conjunction with the multidisciplinary team[6,7] through the use of specific tools of their professional practice, such as the Nursing Process (NP), based on the diagnoses from NANDA International Nursing (NANDA-I), the Nursing outcomes classification (NOC), and the Nursing interventions classification (NIC)[8].

The NANDA-I taxonomy brings as a Nursing diagnosis the "risk of falling" defined as increased susceptibility to falls that can cause physical damage and compromise health[9]. When employing risk diagnosis, the Nursing professional can propose health promotion strategies through fall prevention programs and suggestions for improving care in the hospital environment[8].

This study becomes relevant due to the possibility of supporting the foundation of nurses' knowledge about the risk of falling present in the hospital environment, in addition to encouraging the use of a care plan based on the NANDA, NOC, and NIC terminologies in clinical Nursing practice. For patients, the early identification of the presence of risk of falling will reflect an improvement in the quality of care received, considering that there will be the implementation of conducts for each specific case, demonstrating safety in the care provided.

It should also be noted that the study is aligned with the principles of the Budapest Declaration on Health Promoting Hospitals, which states that health promotion in tertiary care services is important and that users should be encouraged to play an active and participatory role in the care, according to their specific health potential. Besides, patient safety actions are essential for the quality of the hospitalized individual's life[10].

In this perspective, the patient safety culture highlights the importance of the Nursing team's proactivity in preventing falls from strategies that enable the individual's holistic assessment, favoring systematic care as well as a safe environment. Therefore, this study aimed to identify risk factors for falls in hospitalized patients and propose Nursing actions.

METHODS

This is a descriptive and cross-sectional study, with a quantitative approach, carried out in a reference hospital in the northern region of the state of Ceará, Brazil. The philanthropic organization assists approximately 40 thousand patients per month, from more than 60 municipalities in the region, with a population of approximately two million inhabitants, with more than 450 beds[11].

The present study was carried out from June to September 2017 in a clinic wards consisting of 56 beds, among which 29 intended for clinical patients and 27 for trauma patients. The team consisted of six nursing technicians and one nurse on duty, in addition to doctors and residents.

The target population comprised patients admitted to the clinic during the data collection period. The sample calculation was performed based on data on the number of hospitalizations for the period from January to December 2016. This year, 513 patients were assisted at the unit, with an average of 42.75 patients per month. The formula to estimate the percentage was used, with a sampling error of 5%, a confidence interval of 95% (n = 513), and a proportion of occurrence of the outcome of 15%, resulting in 142 patients. However, during the data collection period, a larger sample was obtained, represented by 155 patients.

The inclusion criteria used included: being admitted to the clinic understudy, for at least 24 hours, and being literate so that there was an understanding of the instrument used. The exclusion criteria were: patients with an indication for transfer to another sector of the hospital.

For data collection, an interview guided by a structured and validated instrument that included two parts was used: clinical-epidemiological data and Nursing diagnosis of risk of falling. The collections were carried out by three researchers, properly trained to apply the instrument and assess the risks in the environment.

In the evaluation of clinical and epidemiological data, information such as sex, age, marital status, education level, origin, income, medical diagnosis, and medications was collected. The Nursing diagnosis of risk of falling evaluated the presence of risk factors, according to the taxonomy of the NANDA-I. For the inference of the Nursing diagnosis risk of falling, the Risner framework[12] was used, which establishes the stages of analysis and synthesis. Based on the main risk factors identified, there was tabulation and analysis of patient responses by the researchers, separately, with subsequent discussion in group. Then, a care plan was developed based on the results found through the NOC, which standardizes the name and definitions of results for use in practice, education, and research[13]. For the actions of the Nursing Processes, the NIC was used, which proposes several activities that the nurse can perform with the individual and the community[14].

Statistical analysis was performed using the SPSS program, version 24, to obtain absolute and percentage frequencies, means, and standard deviation. A significance level of 5% and a confidence interval of 95% were adopted. In the end, after data analysis and tabulation, a confrontation with the relevant literature.

The study was approved by the Research Ethics Committee (CEP) of the Universidade Estadual Vale do Acaraú, with Opinion No. 2102871. The study fulfilled with national and international standards of ethics in research involving human beings.

RESULTS

Of the 155 study participants, 25.16% (n = 39) were female and 74.83% (n = 116) male, with a mean age of 47.69 years (± 20. 29). As for occupation, 54.83% (n = 85) were active and 45.16% (n = 70) inactive. Most participants (62.58%; n = 97) were married, while 27.09% (n = 42) were single and 5.16% (n = 8) were widowed and widow, and divorced.

Regarding religion, 84.45% (n = 134) were Catholic, 10.96% (n = 17) evangelicals and 2.58% (n = 4) atheists. The predominant level of education was 0 to 8 years of study, with 68.38% (n = 106), followed by 9 to 11 years of study (27.74%; n = 43) and 3.87% (n = 6) had more than 12 years of study. It was observed that 41.2% (n = 64) of the patients had clinical causes in the diagnosis and 58.8% (n = 91) trauma causes. The average length of stay was 8.52 (± 8.11) days.

The main factors related to the diagnosis of risk of falling in clinic patients are related to patient characteristics, involving physiological problems and the use of medications, in addition to being inserted in a risky environment. There was an emphasis on age over 65 years, the use of auxiliary devices, history of fall, anemia, insomnia, postoperative, difficulty walking, decreased strength in the extremities, impaired balance, ignorance of the environment, insufficient anti-slip material in bathrooms and agents pharmacological (Table I).

Table I - Distribution of risk factors for nursing diagnosis "risk of falling" in patients evaluated at the medical clinic of a hospital institution (n=155). Sobral, Ceará, Brasil, 2017.

Risk factors in adults	n	%
Lower limb prosthesis	2	1.29
Wheelchair use	11	7.09
Age over 65 years	25	16.12
Use of auxiliary devices	43	27.74
Fall History	43	27.74
Cognitive		
Changes in cognitive function	6	3.87
Physiological		
Vascular disease	4	2.58
Change in blood glucose level	5	3.22
Arthritis	5	3.22
Proprioceptive deficits	6	3.87
Incontinence	6	3.87
Neuropathy	6	3.87
Urinary urgency	6	3.87
Diarrhea	8	5.16
Hearing difficulties	8	5.16
Neoplasms	8	5.16
Visual difficulties	20	12.9
Orthostatic hypotension	20	12.9
Condition affecting the feet	22	14.19
Absence of sleep	28	18.06
Anemia	30	19.35
Postoperative	44	28.38
Decreased strength at the extremities	52	33.54
Impaired balance	74	47.74
Impaired physical mobility	79	50.96
Difficulty walking	88	56.77
Environmental		
Use of loose rugs	-	-
Insufficient lighting	2	1.29
Use of immobilizers	2	1.29
Disorganized environment	5	3.22
Exposure to unsafe condition	5	3.22
Little-known scenario	39	25.16
Insufficient non-slip material in the bathroom	46	26.67
Pharmacological agents		
Alcohol consumption	18	11.61
Pharmacological agent	39	25.16

After identifying the factors for the diagnosis of risk of falling, a care plan was developed considering the results desired by the NOC and the interventions described by the NIC, as shown in Chart I.

Chart I - Care plan based on the expected results described by the NOC (classification of Nursing results) and the interventions described by the NIC (classification of Nursing interventions) in patients with a nursing diagnosis of risk of falling evaluated in the institution's clinical clinic hospital (n=155). Sobral, Ceará, Brasil, 2017.

Nursing diagnosis (NANDA)	Expected results (NOC)	Nursing interventions (NIC)
Risk of fallinging (00155)	(0200) Locomotion: walking	(0221) Exercise therapy: walking
	(0201) Locomotion: wheelchair	(0846) Positioning: wheelchair
	(0202) Balance	(0222) Exercise therapy: balance
	(2300) Blood glucose level	(2120) Control of hyperglycemia (2130) Hypoglycemia control
	(0500) Intestinal continuity	(0410) Care for bowel incontinence
	(0501) Intestinal elimination	(0430) Intestinal control
	(0212) Coordinated movement	(0201) Promotion of exercise: training for strengthening
	(1909) Fall prevention behavior	(6490) Fall prevention
	(0007) Fatigue level	(0224) Exercise therapy: joint mobility
	(0602) Hydration	(4120) Water control
	(1809) Knowledge: Personal security	(6486) Security environment control
	(1828) Knowledge: Fall prevention	(6490) Fall prevention
	(2301) Response to medication	(2380) Medication control
	(0208) Mobility	(0202) Promotion of exercise: stretching
	(0917) Neurological status: Peripheral	(1400) Pain control; (2660) Peripheral sensitivity control
	(0113) Physical aging	(1800) Assistance in self-care
	(2004) Physical fitness	(0226) Exercise therapy: muscle control
	(1902) Risk control	(6610) Risk identification
	(0310) Self-care: use of the bathroom	(1804) Self-care assistance: use of toilet
	(0004) Sleep	(1850) Improved sleep
	(0210) Transfer performance	(1806) Self-care assistance: transfers
	(0502) Urinary continence	(0610) Urinary incontinence care

DISCUSSION

The participants' profile in the present study was: men, with an average age of 47 years, active, married, Catholic and up to 8 years of study. Corroborating these data, other studies, carried out in Southern Brazil[15] and Minas Gerais[16], identified a similar profile of hospitalized patients. In the current study, the findings are justified by a large number of trauma patients and their intrinsic relationship with men of working age.

Regarding risk factors, all patients in the current study had at least one risk associated with falling during the hospitalization period. The main risk factors were related to physiological conditions, the use of pharmacological agents, difficulty in walking, impaired mobility, and impaired balance. The environmental risk was also present, represented by insufficient non-slip material in the bathroom and a little-known scenario.

Other research has also identified similar risk factors to infer the risk of falling, such as environmental conditions, neurological changes, impaired mobility, adverse medication effects, age extremes, and physiological changes[15,16].

From the knowledge of the main risk factors, the nurse, as a health-promoting agent, has subsidies to create a safe environment and establish strategies that contribute to reducing the occurrence of falls. The actions for "fall prevention", arranged in the NIC, are broad, represented by 65 activities that can be performed in different health scenarios. These activities are grouped into cognitive, environmental, balance, transfer, use of health devices, health education, hospital and intra-hospital structures, and alarm systems dimensions that can be targeted according to the main needs of the patient[8,14].

It is pertinent that the actions for "fall prevention" are directed to the context of individuals and when promoting health in the hospital environment to reduce falls, it is necessary to use specific protocols, a targeted care plan, and health education. The implementation of interventions, focusing on the existing risk factors, makes it possible to reduce the indicators and their consequences[17].

In the present study, NIC interventions were suggested based on NOC nursing results. One of the predominant risk factors in this study was "age over 65 years" and, according to the National Council on Aging, every 11 seconds, an elderly person is admitted to the emergency room due to a fall and, every 19 minutes, an elderly person dies from complications after falling[18].

In the present study, NIC interventions were suggested based on NOC nursing results. One of the predominant risk factors in this study was "age over 65 years" and, according to the National Council on Aging, every 11 seconds, an elderly person is admitted to the emergency room due to a fall and, every 19 minutes, an elderly person dies from complications after falling[18].

Although the risk of falling becomes greater as the individual ages, this adverse event is caused by a complex interplay of biological, behavioral, environmental, and socioeconomic risk factors. Age alone should not determine interventions. However, careful risk assessment and provision of appropriate interventions, including treatment of medical conditions, revision of medications, exercise education and safety education in fall prevention, are pertinent, as they can contribute to healthier aging[19].

One of the pillars of health promotion is the incentive to practice physical activity to maintain a healthier lifestyle. Thus, health professionals can guide balance and strength exercises during daily activities with patients and family members[20].

In cases where the risk factors are: "diarrhea", "incontinence", and "urinary urgency", Nursing must provide assistance with care in bowel incontinence, bowel control, water control, and care in urinary continence. A study carried out in China analyzed adverse events recorded in medical records of 818 beds, and revealed a considerably greater risk of falling in patients with impaired eliminations[21]. In these cases, it is important to review the use of medications, such as diuretics and laxatives, in addition to assisting continuous comfort, with frequent diaper changes, if necessary, or a routine with regular times to take him/her to the bathroom[22].

In the risk factor "insomnia", interventions should enable greater quality of sleep for the patient. A Canadian retrospective cohort study showed that falls often occur at night, and are not seen by health professionals being associated with insomnia, cognitive changes in patients, and changes in Nursing staff on duty[23].

Many of the factors associated with falling are modifiable and preventable, so attitudes towards health education and prevention can positively interfere and reduce the chances of falling[24].

It is known that the prevention of falls in hospitalized patients has become an object of investigation worldwide, since it has direct repercussions for patient safety and quality of care. The implementation of actions to prevent falls with the use of risk assessment instruments and awareness / orientation of patients, family members, and teamwork reduces the occurrence of falls[25].

It is suggested, then, that health promotion programs with a focus on reducing falls should not be implemented only in the wards, with patients and family members, but also occur in the corridors, waiting rooms and other environments of the hospital, with the objective of reaching a larger number of people and, thus, raising awareness about the risks of falling in the hospital.

The main limitations of the current study were the fact that only one hospital service sector was included in the data survey. Thus, it was not possible to compare the particularities of each sector and its association with the risk of falling. Another limitation was the fact that the actions of the Nursing processes were not implemented with patients, which would enable the assessment of effectiveness and applicability in clinical practice.

Recognizing the risks inherent to each elderly patient and that it is possible to implement strategies for the prevention of falls, such as health education, intending to enable these individuals to act in the self-management of risks, thus increasing adherence to oriented care and, consequently, reducing this adverse event. Given the need to provide quality care to hospitalized patients, assessing the risks of falling and building prevention strategies are essential. The elaboration of the care plan allows the nurse to make a clinical decision during the assistance, which favors safe and harm-free care.

CONCLUSION

The identification of the Nursing diagnosis "risk of falling" allowed to evidence the predominance of risk factors, such as age over 65 years, use of auxiliary devices, history of fall, anemia, insomnia, postoperative, difficulty in

walking, decreased strength extremities, impaired balance, ignorance of the environment, insufficient non-slip material in the bathrooms and presence of pharmacological agents in hospitalized patients at the medical clinic.

The main actions to be implemented to prevent the occurrence of falls are: promotion of exercise, pain control, fall prevention, environment control, assistance in self-care, and health education.

CONFLICTS OF INTEREST

Authors declare that there are no conflicts of interest.

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CONTRIBUTIONS

Maria Aline Moreira Ximenes and **Jefferson Ribeiro Aguiar**, contributed to the preparation and design of the study; data acquisition, analysis and interpretation; and the writing and / or revision of the manuscript. **Ismael Brioso Bastos**, **Liliane Vieira de Sousa** and **Joselany** Áfio **Caetano** contributed to the writing and / or revision of the manuscript. **Lívia Moreira Barros** contributed to the acquisition, analysis and interpretation of data; and the writing and / or revision of the manuscript.

REFERENCES

1. World Health Organization. Falls [Internet]. Geneva: WHO; 2018 [accessed on 2019 Sept 6]. Available from: http://www.who.int/mediacentre/factsheets/fs344/en/

2. Souza AB, Maestri RN, Röhsig V, Lorenzini E, Alves BM, Oliveira D, et al. In-hospital falls in a large hospital in the south of Brazil: A 6-year retrospective study. Appl Nurs Res [Internet]. 2019 [accessed on 2019 Nov 5];48:81-87. doi: 10.1016/j.apnr.2019.05.017

3. Kazuyoshi K, Shiro I, Yuko I, Yusuke S, Kei A, Yoshihiro N, et al. Incidence and characteristics of accidental falls in hospitalizations. Nagoya J Med Sci [Internet]. 2017 [accessed on 2018 Nov 4];79(3):291-98. doi: 10.18999/nagjms.79.3.291

4. Morello RT, Barker AL, Watts JJ, Haines T, Zavarsek SS, Hill KD, et al. The extra resource burden of in-hospital falls: a cost of falls study. Med J Aust [Internet]. 2015 [accessed on 2018 Nov 4];203(9):367e. doi: 10.5694/mja15.00296

5. Lusardi MM, Fritz S, Middleton A, Allison L, Wingood M, Phillips E, et al. Determining risk of fallings in community dwelling older adults: a systematic review and meta-analysis using posttest probability. J Geriatr Phys Ther [Internet]. 2017 [accessed on 2018 Nov 6];40(1):1-36. Available from: https://www.ncbi.nlm.nih.gov/pubmed/27537070

6. Toye C, Kitchen S, Hill A, Edwards D, Sin M, Maher S. Piloting staff education in Australia to reduce falls in older hospital patients experiencing delirium. Nurs Health Sci [Internet]. 2017 [accessed on 2018 Nov 5];19(1):51-8. doi: 10.1111/nhs.12300

7. Pasa TS, Magnago TSBS, Urbanetto JS, Baratto MAM, Morais BX, Carollo JB. Risk assessment and incidence of falls in adult hospitalized patients. Rev Latinoam Enferm [Internet]. 2017 [accessed on 2018 Nov 5];25:e2862. doi: 10.1590/1518-8345.1551.2862

8. Hernández-Herrera D, Aguilera-Elizarraraz N, Vega-Argote M, González-Quirarte N, Castañeda-Hidalgo H, Isasi-Hernández L. Aplicación de las actividades de la intervención de enfermería Prevención de caídas en adultos hospitalizados. Enferm Univ [Internet]. 2017 [accessed on 2018 Nov 5];14(2):118-23. doi: 10.1016/j.reu.2017.02.007

9. NANDA International. Diagnósticos de enfermagem da NANDA: definições e classificação 2015 – 2017. Porto Alegre: Artmed; 2015.

10. Pereira FGF, Matias EO, Caetano JA, Lima FET. Segurança do paciente e promoção da saúde: uma reflexão

emergente. Rev Baiana Enferm [Internet]. 2015 [accessed on 2019 Out 17];29(3):271-77. doi: 10.18471/rbe. v29i3.12205

11. Thiago E. Histórico [Internet]. Sobral: Santa Casa de Misericórdia de Sobral; 2016 [accessed on 2018 Jan 11]. Available from: http://stacasa.com.br/site/hitorico/

12. Risner PB. Nursing diagnosis: diagnostic sistements. In: Christensen PJ, Kenney JW. Nursing process: application of conceptual models. 3rd ed. St. Louis: Mosby; 1990. Cap. 7, p. 132-57.

13. Moorhead S, Johnson M, Maas M, Swanson E. Classificação dos Resultados de Enfermagem: mensuração dos resultados em saúde. 5rd ed. Rio de Janeiro: Elsevier; 2016.

14. Bulechek GM, Butcher HK, Dochterman JM, Wagner CM. Classificação das intervenções de enfermagem (NIC). 6rd ed. Rio de Janeiro: Elsevier; 2016.

15. Luzia MF, Almeida MA, Lucena AF. Mapeamento de cuidados de enfermagem para pacientes com risco de quedas na Nursing Interventions Classification. Rev Esc Enferm USP [Internet]. 2014 [accessed on 2019 Sept 5];48(4):632-40. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S00806234201400040 0632&lng=en&nrm=isso

16. Mata L, Azevedo C, Policarpo A, Moraes J. Fatores associados ao risco de queda em adultos no pós-operatório: estudo transversal. Rev Latinoam Enferm [Internet]. 2017 [accessed on 2019 Set 5];25:e2904. Available from: http://www.revistas.usp.br/rlae/article/view/134960

17. Araújo MF, Caldevilla NN, Maciel C, Malheiro F, Rodríguez-Borrego MA, López-Soto PJ. Record of the circumstances of falls in the community: perspective in the Iberian Peninsula. Rev Latinoam Enferm [Internet]. 2018 [accessed on 2019 Out 17];26:e2977. doi: 10.1590/1518-8345.2373.2977

18. National Council on Aging. Falls prevention: keeping older adults safe and active [Internet]. Arlington: NCA; 2018 [accessed on 2019 Out 17]. Available from: https://www.ncoa.org/healthy-aging/falls-prevention/

19. Bolding DJ, Corman E. Falls in the Geriatric Patient. Clin Geriatr Med [Internet]. 2019 [accessed on 2019 Out 17];35(1):115-26. doi: 10.1016/j.cger.2018.08.010

20. Kulinski K, DiCocco C, Skowronski S, Sprowls P. Advancing community-based falls prevention programs for older adults-the work of the administration for community living/administration on aging. Front Public Health [Internet]. 2017 [accessed on 2019 Out 17];5:4. doi: 10.3389/fpubh.2017.00004

21. Hou WH, Kang CM, Ho MH, Kuo JM, Chen HL, Chang WY. Evaluation of an inpatient fall risk screening tool to identify the most critical fall risk factors in inpatients. J Clin Nurs [Internet]. 2017 [accessed on 2018 Nov 6];26(5-6):698-706. doi: 10.1111/jocn.13510

22. Ministério da Saúde (BR). Protocolo para prevenção de quedas [Internet]. Brasília: Ministério da Saúde; 2013 [accessed on 2018 Nov 6]. Available from: https://www20.anvisa.gov.br/segurancadopaciente/index.php/ publicacoes/item/prevencao-de-quedas

23. Trumble D, Meier MA, Doody M, Wang X, Bagshaw SM. Incidence, correlates and outcomes associated with falls in the intensive care unit: a retrospective cohort study. Crit Care Resusc [Internet]. 2017 [accessed on 2018 Nov 7];19(4):290-5. Available from: https://www.ncbi.nlm.nih.gov/pubmed/29202254

24. Lima AP, Lini EV, Dellani MP, Portella MR, Doring M. Prevalência e fatores associados às quedas em idosos de Estação-RS: estudo transversal de base populacional. Cad Saúde Colet [Internet]. 2017 [accessed on 2018 Nov 7];25(4):436-42. doi: 10.1590/1414-462x201700040271

25. Luzia MF, Argenta C, Almeida MA, Lucena AF. Definições conceituais dos indicadores do resultado de enfermagem "Conhecimento: Prevenção de quedas". Rev Bras Enferm [Internet]. 2018 [accessed on 2018 Nov 06];71(2):461-70. doi: 10.1590/0034-7167-2016-0686

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